

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

May 31, 2006 Meeting

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

Notes: Robin Harkless

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Priest Rapids Update

Russell Langshaw, Grant County PUD, presented Priest Rapids operations for the weeks of May 15-28. He also included a graph showing daily delta and flow bands. An exceedance occurred on May 17 due to emergency flood control measures taken upstream, and on May 22, the operation began below the set minimum 150 kcfs due to prior weekend operations. 200 temperature units are needed to reach the end of protection flows. Russell suggested that protection flows would end in the next 7-10 days.

Dworshak Taft Line Outage

BPA is planning a line outage at Dworshak from June 12-30 to allow for necessary maintenance of the line. Mike Viles, BPA, provided information to TMT regarding the outage, explaining that the dates were chosen to coincide with thermal outages and other reasons to minimize potential problems and impacts to the system. Repairs will be done to spacer dampers, damaged conductor, damaged insulators and tower hardware. BPA has given spacer dampers a high priority for repair. BPA can put the line back in service with 5 hours advance notice if emergency conditions arise but prefer not to delay the work. Additional outages are planned for Fall 2006, June 2007 and Fall 2007. Studies have been done on the impacts to the hydro system; Mike noted that Hungry Horse will be most potentially affected, Dworshak may be affected and Libby will be least affected by the planned outage.

Don Faulkner, COE, offered that of the 2550 megawatts that will be available during the line outage, half of the power will go to PUD's. Exact numbers for transmission capacity will not be known until just prior to the operations. BPA, the COE, and the BOR have been planning for the outage and will do their best to avoid problems.

Lower Granite Research

Tim Wick, Walla Walla COE, reported that the USGS preferred schedule for the start of an RSW test at Lower Granite is June 8 instead of June 21. The date and amount of spill would be slightly different than that written into the Spill Implementation Plan. Two spill patterns would be used – flat and bulk. The date was chosen based on the best availability of fish.

Next Steps: While there was general support for the test, the amount of spill remained a question. TMT members agreed to discuss internally whether there is technical and policy support for the proposed alternative operation. TMT will hold a conference call on Friday, June 2, at 11:00 am to revisit the issue.

ACTION: If SRWG is also on board, the test will be included in the monthly report to the court. The facilitation team will contact absent members of TMT (Idaho, Washington, Montana, and BOR) to make certain they have the opportunity to respond.

Dworshak Summer Operations: SOR NPT-2006-1

Dave Statler, Nez Perce, began his presentation of the Nez Perce SOR for Dworshak operations by setting the context that Dworshak summer operations are being discussed and addressed in various forums and processes including TMT, BiOp Remand policy work group, a potential MOA from BPA, Nez Perce agreement group, Idaho Operations Board, NPCC Mainstem Amendments, etc.

Generally, the SOR recommends that Dworshak be operated during the summer for temperature control and flow augmentation. Shape flows to meet 68° F at Lower Granite tailwater and limit cold water releases during the first half of July for rearing Fall Chinook juveniles in the Clearwater. After July 15, maintain 10 kcfs discharges to cool the Lower Snake and increase up to 14 kcfs as necessary to maintain temperature standards. Target elevation 1535' or higher by the end of August and 1520' by the end of September. Manage 200 kaf from the Nez Perce agreement per guidance from the Dworshak Board.

Questions and Comments from TMT:

- Is temperature the overriding priority? Yes, more so than specific discharges proposed for July.
- If there is a technical dispute, which process should address it? 200 kaf per the Nez Perce agreement (elevation 1525-1530') will be addressed in the development of the Dworshak Plan by the Dworshak Board chaired by Nez Perce, and should not be debated through TMT. Other technical disputes could be addressed by TMT.
- The July 15 start date was chosen based on when most Clearwater subyearling smolts have grown to size and are moving through the system, per previous years' observations.
- Kyle Dittmer, CRITFC, reported that Ben Cope, EPA, will run weather case flow scenarios and will share them with TMT at the next TMT meeting.
- Suggestion: in the general framework change 'target' 68°F to 'avoid exceeding' as written in the summary of the SOR.
- Is there a contingency for operations prior to July 15? With the planned line outage and other pertinent factors, this may need to be considered. The COE suggested that Dworshak will likely not be impacted by the planned taft line outage described above. Generation would follow a similar pattern as it normally does, starting higher and gradually reducing to a smooth refill. The action agencies will work to avoid fluctuations during the repair work.

- The request appears very similar to usual BiOp operations; why develop the SOR? The difference is that the SOR is more prescriptive to be conservative earlier in July with cool water to save for later in the season.
- Suggestion: Provide a written summary of data on the Clearwater fish to clarify conditions supporting the recommendation for July operations.
- The SOR appears to reduce flexibility for shaping flows during the migration in July, and only focus on temperatures. Both should be considered.

Next Steps: Dave Statler will make revisions to the proposal based on today's discussion and any follow-up suggestions shared, and submit a final SOR at the next TMT meeting.

Libby/Hungry Horse Operations: SOR 2006-MT-1

Jim Litchfield, Montana, shared a draft SOR for summer operations at Libby and Hungry Horse, which he noted is the NPCC's Mainstem recommendation, similar to past years' proposals. The key difference this year, with higher flows, is the recommended draft in September at both projects to 10' from full instead of 20' from full. Also included were preliminary results of a BPA hydropower regulation study on Montana's proposed operation showing a 3% reduction in flows at McNary during July and August, and language from Judge Redden's findings relative to the Plaintiff's proposal to increase flow augmentation, stating that there was not measurable support that increases will enhance in-river smolt survival. Jim extended appreciation to TMT for efforts in past years to implement the recommended operation – particularly 2004 which he described as successful.

Finally, he shared that the Montana proposal is also being discussed through the BiOp Remand policy work group, and that he or Brian Marotz, Montana Fish Wildlife and Parks, could join discussions in other forums, e.g. FPAC, upon request. If a technical and policy consensus were reached on the recommendation, it would need to go through formal filing with the court.

TMT comment: The ISAB interpretation that there would be no measurable differences in smolt survival with flow differences may not be true this year, given that higher flows may result in greater than 3% reductions in the lower river. There is currently very little data on in-river smolt survival. Temperature modeling in the lower river to quantify affects from changes in flows is lacking as well.

Jim added that modeling of the proposed operation and impacts to spring augmentation flows predict that Hungry Horse would meet its target elevation in 4 additional years out of 50.

Next Steps: Additional questions and comments will be shared with Jim about the recommendation. TMT will discuss the SOR further at the next TMT meeting.

Balance Priest Rapids Flow Objectives/Grand Coulee Refill

The salmon managers were asked to consider their preference for Priest Rapids flow objectives and Grand Coulee refill operations. Given this year's high flow year, the salmon managers did not feel this would be an issue. They discussed this at FPAC, and generally, they prefer higher flows from Priest Rapids later in June (but there was not a strong opinion either way).

Operations Review

Reservoirs:

Lower Granite Navigation – Cathy Hlebechuk, COE, shared that two spill reductions occurred over the last two weeks for towboat operations, one to zero and one a slight decrease. There have been additional reductions for fish barges. John Wellschlager, BPA, noted that if flow had been unregulated last year, there would have been 925 kcfs in the system.

Operations – Grand Coulee was at elevation 1271.6’ and filling. Hungry Horse was at elevation 3543.7’ and filling. Priest Rapids flows averaged 230-275 kcfs. Libby was at elevation 2449.6’, operating at full powerhouse out and 32 kcfs in. Bonners Ferry elevation reached 1763.65’, very close to flood control. Dworshak was at elevation 1581.4’ and filling. Lower Granite flow objectives averaged 132.5 kcfs, Priest Rapids averaged 177.5 kcfs, and McNary averaged 319.3 kcfs. There will be an update from the sturgeon group on results of this year’s pulse at the next TMT meeting.

Flow Augmentation Volumes – Cathy shared graphs (attached to today’s TMT agenda) of ESP flow augmentation forecasts for Libby, Dworshak, Hungry Horse, Priest Rapids and Grand Coulee.

Fish:

Paul Wagner, NOAA, shared that adult numbers exceeded the pre-season forecast. Yearling chinook numbers peaked at Lower Granite, evened out at Little Goose and were increasing at Columbia River projects. The steelhead and sockeye runs are reaching their tail end; overall this was a good migration year.

Power System:

John Day T-1 Outage – Testing is slightly ahead of schedule. So far, testers have found that just the bushings were damaged, which is good news. The transformer is expected to be back up as early as September.

Water Quality:

Jim Adams, COE, reported that there have been several TDG exceedances in the system, with a high of 132.9% at the Lower Granite tailwater at one point. TDG levels are now tapering. FPAC was briefed on this issue at their meeting earlier this week and Jim will continue to provide reports to FPAC and TMT. Adult gas bubble trauma had not been reported lately.

TMT Meeting Schedule: NOTE NEW DATE

Monday, June 12 agenda items include:

- Libby/Hungry Horse SOR (Montana)
- Dworshak Modeling (EPA/CRITFC)
- Dworshak Summer Operations SOR (Nez Perce)
- 2006 Sturgeon Operations Review (USFWS)
- Permit Process – Marine Mammals (Oregon and Washington)
- Adult Population Analysis of Chum – Error bounds (Oregon)

- System Operations Review – All

Technical Management Team Meeting

May 31, 2006

1. Greetings and Introductions.

Donna Silverberg welcomed everyone to today's Technical Management Team meeting, which was chaired by Cathy Hlebechuk. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at this meeting. Anyone with questions or comments about these notes should contact Hlebechuk at 503-808-3936.

2. Priest Rapids Update.

Russell Langshaw provided an update on recent Priest Rapids fish protection operations. He noted that the flow band was exceeded on May 17 due to flood control operations; it was also exceeded on May 19 and May 26-29.

We're currently at around 1,200 temperature units, with about 200 more TUs to accumulate before this year's program ends, Langshaw said. We should reach that level in a week to 10 days.

2. Dworshak – Taft Line Outage.

Mike Viles said BPA will be taking the Dworshak-Taft transmission line out of service later this month. The plan from June 12-30 is a daily outage from 6 am to 8 pm. This is to do with the West of Hatwai transmission path, which loads most heavily at night, he said. As load goes down, and you get into an excess situation, that generally flows from east to west. We wanted to do this in June because there are some planned unit outages scheduled for that month, on the thermal plants east of the Cascades. One other benefit is that this line outage has been hard to get historically, before we had the Coulee-Bell transmission line, which now provides a parallel line, Viles said. The outage will limit transmission to 2550 MW, about down from 4,000 MW if all lines were in service. Without Coulee-Bell, if you took this line out of service, capacity went down to about 1,100 MW. This is part of a 12-year project to replace all of the spacer dampers on this line, he explained; there are also many insulators that need to be replaced. Some of the connecting parts are basically corroding away, and need to be replaced on 97 towers. The goal is to reduce the risk of unplanned outages.

We're limited as to when we can conduct this work, from June to some time in October, said Viles; there is no way to completely eliminate the risk of impacting fish operations, but we're attempting to minimize that risk. There is a potential that transmission capability across the West of Hatwai path could impose generation restrictions. We would prefer to do all of this outage work in September, but there are simply too many lines that need to be done for us to do all of this work in September. A total of six crews will be working on this particular repair, he said, so we're working as fast as we can.

What's the bottom line impact to flows? Kyle Dittmer asked. That's a good question, but the transmission capability will go down from about 4,000 MW to 2,550 MW, so there will be some impact, Viles replied. We can get off the line within five hours if this limitation is having an unacceptable impact to flows, Viles added. Two more outages are planned for the June 2007 period, he added. We realize that this is a hot topic, because of the potential to limit generation and flow, but this really is critical work to improve transmission system reliability, Viles said.

The group discussed the potential impacts of this planned outage on flows, transmission and generation. We're expecting, during the outage, to have to reduce Hungry Horse outflow by about 3 Kcfs at Hungry Horse, Tony Norris said; we've had to increase discharge because we got some additional snow in that area last weekend. Don Faulkner said Libby is expected to operate at full load during the outage (600 MW), while generation will be restricted to project minimum (125 MW) at Hungry Horse. Dworshak will be releasing about 3 kcfs, but Albeni Falls may have to go to zero generation. Everyone here knows Montana's concerns, said Jim Litchfield – we want to avoid any spill at Libby or Hungry Horse. That's why we're ramping up Hungry Horse discharge now – to move some of that water out of there, Norris replied.

3. Lower Granite Summer Research.

Tim Wick said he had asked the USGS for their preferred schedule for the summer RSW test at Lower Granite; they are asking for a test that begins June 8. The summer operation at Lower Granite is scheduled to start about June 20; the June 8 start would result in a change. The summer schedule calls for 18 Kcfs spill; the test calls for 19 Kcfs spill. We would, in other words, be starting the summer operation 12 days early at Lower Granite, Wick said. We would therefore wind up with 1 Kcfs less spill for the last 12 days of the spring period, and a little more spill for the summer period. I wanted to make sure no one had a problem with what we want to do there, Wicks said.

The scheduled research is a radio-telemetry study with two spill treatments – flat spill, and bulk spill a couple of bays over from the RSW, he explained – under both treatments, the RSW would be operating. It's a different pattern than the one we used last year, which included RSW operation plus regular training spill, and RSW only. In

response to a question, Wick said the timing of the test is driven by the ability to obtain fish for tagging, and the desire to conduct the test while the bulk of the run is passing.

How will this impact the BGS test? Bernard Platt asked. The BGS test is now complete, so there will be no impact, Wick replied. In response to another question, Wick said the test plan was coordinated with the SRWG, but the timing of the test was not.

It was agreed that the TMT membership will think about this proposed change in operation and discuss any concerns they have with the Corps by this Friday, June 2, because of the need to coordinate any change in spill operations with the other plaintiffs and with Judge Redden. It was agreed that, if there are strong objections on the part of the salmon managers, a conference call may be needed this Friday.

4. Dworshak Summer Operations – Nez Perce SOR.

Dave Statler described SOR NPT 2006-1. This SOR, submitted yesterday, requests the following specific operations:

- Operate Dworshak during the summer for temperature control and flow augmentation, shaping augmented flows to achieve the target temperature standard of 68 degrees F as measured at the Lower Granite tailrace. Limit cold water releases during the first half of July for rearing fall chinook juveniles in the Lower Clearwater River. After July 15, maintain continuous, evenly distributed discharges of 10 Kcfs (full powerhouse capacity) to cool the Lower Snake. Provide discharges in excess of 10 Kcfs, up to a maximum of 14 Kcfs, as necessary to meet the target Lower Granite temperature standard, pursuant to actual in-season conditions. Achieve a target elevation of 1535 msl or higher by August 31 to preserve 200 kaf for September temperature/flow augmentation control as per the SRBA agreement. The management of 200 kaf (elevation 1535 to 1520 msl) will be determined by the Dworshak Board. Achieve a target elevation of 1520 msl during September.

The full text of this SOR is available via hot-link from today's agenda on the TMT homepage; please refer to this document for additional details.

The group devoted a brief discussion to the Nez Perce SOR, offering a few clarifying questions and comments. Some of these concerns had to do with the somewhat cautious approach advocated by the tribe, as opposed to the more aggressive, "get ahead of the temperature curve" approach the TMT has used in some past years. Statler replied that the approach advocated in this SOR is actually quite similar to the actions that have been implemented in past years. And how would any disputes be addressed? Paul Wagner asked. By someone other than me, Statler replied. Other TMT participants expressed concern about the fact that the Nez Perce SOR focuses on temperature control, and does not place as much emphasis on the flow augmentation aspect of Dworshak summer operations.

Kyle Dittmer said he is working with Ben Cope to work up some temperature model runs, based on various flow and weather scenarios; Dittmer said he hopes to have the results of that modeling available for discussion at the next TMT meeting. Silverberg said that, given the late arrival of this SOR, and the fact that there is still some time before the operation would begin, she will not ask the TMT to make a recommendation on the Nez Perce SOR at today's meeting. It was agreed to revisit this topic at the June 14 TMT meeting.

5. Libby Operations – Montana SOR.

Jim Litchfield provided an overview of SOR 2006-MT-1, submitted prior to today's meeting. This SOR requests the following specific operations:

Hungry Horse

- Maintain minimum in-stream flows for bull trout at Columbia Falls and in

- the river below Hungry Horse Dam
- Attempt to refill by June 30 while avoiding the risk of spill through filling the project too quickly.
- In late June, reclamation will estimate a flat flow from Hungry Horse for the July-September period. This flow is to be designed to draft Hungry Horse to 10 feet from full by September 30. It may be necessary to adjust flows upward or downward in order to achieve the target elevation; if so, project ramp rates should be followed to achieve a stable aquatic environment below the dam.
- Attempt to provide stable or, if necessary, slowly declining flows at Columbia Falls during the draft.

Libby

- Following the May-June operation for sturgeon, the Corps will estimate a flat flow designed to draft Libby to 10 feet from full by September 30.
- The Corps should attempt to refill Libby, while avoiding the risk of spill through filling the reservoir too quickly.
- The Corps, in consultation with the State of Montana, will monitor Libby outflow throughout the summer to achieve a stable weekly average flow. It may be necessary to adjust flows upward or downward in order to achieve the target elevation; if so, project ramp rates should be followed to achieve a stable aquatic environment below the dam.
- Operate to provide at least minimum bull trout flows through September (USFWS BiOp)
- Provide even or gradually declining flows through the summer period (avoid a double peak).
- Investigate the possibility of a storage exchange with Canada to further reduce the need for reservoir drafts from Libby.

Litchfield thanked the Corps and the other action agencies for their willingness to work with Montana to fine-tune the Libby and Hungry Horse operations in past years. He said the overall goal of this SOR is to provide optimal conditions for resident fish in Montana while minimizing any impacts on anadromous fish downstream. He estimated that the flat flow necessary to achieve elevation 2449 at Libby by September 30 would be about 11.8 Kcfs, based on the most recent runoff volume forecasts for that basin. He noted that this is expected to result in an approximately 6 Kcfs – about 3 percent of total river flow – reduction in flows at McNary Dam during July and August.

Litchfield said he is not seeking a decision at today's meeting; there is still some time before implementation of the operations requested in this SOR would need to begin. Given the remand and water conditions this year, 2006 is a somewhat unusual year, operationally, he said; Montana would very much like to see the Council's recommended Montana operation fully implemented this year.

Litchfield invited anyone with question, comments or concerns about the Montana SOR to contact him directly.

In response to a question, Litchfield said that, given the ongoing remand process, if this SOR is implemented, there will need to be a significant consensus among the parties to the litigation, followed by a filing with the court.

The group devoted a few minutes of discussion to this SOR, offering a series of clarifying questions, comments and concerns. Wagner noted that one issue that has frustrated the ISAB in its efforts to evaluate the effects of the Montana operation is the lack of water temperature modeling information for the lower river. That would be relatively simple to obtain, because it's a physical measurement, Wagner observed. Hlebechuk noted that, previously, Brian Merotz had said that a flat 9 Kcfs outflow from Libby produces optimal in-river conditions; this SOR requests flows 2.8 Kcfs higher. Litchfield replied that the flows requested are within the range of flows that will produce good in-river conditions in Montana. Ultimately, it was agreed to revisit the Montana SOR at the next TMT meeting.

6. Balancing Priest Rapids Operations with Grand Coulee Refill.

Russ Kiefer said the salmon managers did discuss this issue briefly at yesterday's FPAC meeting; it was agreed that this is unlikely to be a difficult decision, given water conditions this year, because flows will likely be high enough to accommodate both Grand Coulee refill and adequate flows at Priest Rapids. The salmon managers would prefer that, if it comes to a choice, they would prefer higher Priest Rapids flows later, rather than earlier, in June.

7. Marine Mammal Permit Update.

This topic was not addressed at today's meeting.

8. Error Bounds on Chum Counts.

This topic was not addressed at today's meeting.

9. Operations Review.

Hlebechuk said that, since the last TMT meeting, there have been only two spill reductions to accommodate navigation at Lower Granite. Wellschlager touched on flood control, noting that, last week, if it wasn't for the FCRPS, the unregulated flow in the Lower Columbia would have been 920 Kcfs. It's worth noting that there are benefits to the system, Wellschlager said.

The Corps noted that updated flow augmentation graphs are now available for Libby, Hungry Horse and Dworshak; this information is available via hot-link from today's agenda on the TMT homepage.

Reclamation said Grand Coulee is currently at elevation 1271.6 feet and filling. 3543.7 at Hungry Horse, releasing 4 Kcfs, going up to 5 Kcfs later today. the project is expected to refill this year. Priest Rapids flows have been 235-270 Kcfs recently. Libby is at 2449.6 feet, about 9 feet from full, with inflows of 32 Kcfs, down from 72 Kcfs a few days ago. The project is releasing full powerhouse discharge. Dworshak is at 1581.4 feet, 18.6 feet from full and filling slowly. Since April 3, the average flow at Lower Granite has been 132.5 Kcfs, at Priest Rapids, since April 10, 177.5 Kcfs; at McNary 319.3 Kcfs. We're basically in a flood control operation right now, and slowly filling the projects, Hlebechuk said.

It was noted that no sturgeon spawning has been observed to date in the Kootenai, despite the ongoing sturgeon operation at Libby; the problem appears to be the males. It was agreed that a report from the sturgeon managers at a future TMT meeting would be informative.

Wagner reported that the adult spring chinook count to date is 96,000 fish at Bonneville, in excess of the pre-season forecast, but in close congruence with the new model developed by the NMFS Science Center, which predicted 95,000 adults this year. Moving on to juveniles, Wagner said yearling chinook indices are now declining in the Lower Snake, from 83,000 fish per day on May 17 to fewer than 10,000 fish per day currently. Most of the action, currently, is in subyearling chinook, where the Lower Snake counts continue to be strong. The juvenile steelhead migration is now at the tail end of the run, as is the sockeye run, Wagner said. Overall, it's been a good outmigration year, he said; conditions were generally very good.

Wellschlager said there are no power system problems to report at this time. Faulkner said it appears that only the initial set of bushings were damaged in the T1 outage; repairs could be completed as soon as late July, if that is the case.

Jim Adams updated the group on the current water quality situation, noting that gas levels remain high throughout the system. Since May 17, the river has been pretty well gassed-up, he said; TDG levels hit 132.9% in the Lower Granite tailwater on May 21, but have since declined.

10. Next TMT Meeting Date.

The next Technical Management Team meeting was set for Monday, June 12. Meeting summary prepared by Jeff Kuechle, BPA contractor. (3.5 hours)

Technical Management Team Meeting Participants

May 31, 2006

Name	Affiliation
Donna Silverberg	Facilitation Team
Jim Litchfield	Montana
Cathy Hlebechuk	COE
Tony Norris	USBR
Paul Wagner	NOAAF
David Wills	USFS
John Wellschlager	BPA
Kyle Dittmer	CRITFC
Russ Kiefer	IDFG
Robin Harkless	Facilitation Team
Dave Statler	NPT
Dan Spear	BPA
Tim Heizenrater	PPM
Rudd Turner	COE
Russ George	WMCI
Ruth Burris	PGE
Mike Viles	COE
Don Faulkner	COE
Greg Haller	Montana
Bernard Klatte	
Judi Danielson	